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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/567,117

07/31/2007

Kouichi Fujiwara

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06/10/2009

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EXAMINER

CHU, JOHN S Y

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

06/10/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/567,117	Applicant(s) FUJIWARA ET AL.	
	Examiner JOHN S. CHU	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

This Office action is in response to the application filed February 3, 2006.

1. The rejection under 35 U.S.C. 103(a) as being unpatentable over MOMOTA et al (2004/0202954) and WATANABE et al is **withdrawn** in view of the arguments by applicants.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

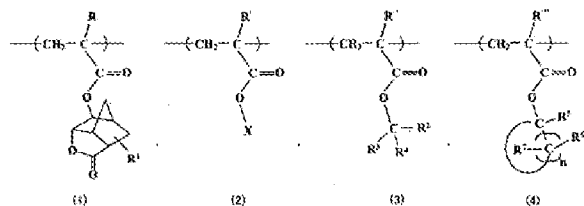
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-8 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by SATO et al (7,179,578).

The claimed invention is drawn to the following:

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3. An acrylic polymer comprising a recurring unit (i) represented by the following formula (1), a recurring unit (ii) represented by the following formula (2), and an acid-labile group-containing recurring unit (iii) which contains at least one unit selected from a recurring unit represented by the following formula (3) and formula (4),



wherein, in the formulas (1) to (4), R, R', R'', and R''' individually represent a hydrogen atom, methyl group, or trifluoromethyl group, in the formula (1), R¹ represents a hydrogen atom, linear or branched alkyl group having 1-4 carbon atoms, linear or branched alkoxy group having 1-4 carbon atoms, or linear or branched fluoroalkyl group having 1-4 carbon atoms, in the formula (2), X represents a polyalicyclic hydrocarbon group consisting only of carbon and hydrogen and having 7-20 carbon atoms, in the formula (3), R² and R³ individually represent a linear or branched alkyl group having 1-4 carbon atoms and R⁴ represents an alicyclic hydrocarbon group having 4-20 carbon atoms, and in the formula (4), R² represents a linear or branched alkyl group having 1-4 carbon atoms, R⁶ and R⁷ individually represent a hydrogen atom or a linear or branched alkyl group having 1-4 carbon atoms, and n represents an integer

SATO et al discloses a positive resist composition comprising an acrylic resin which anticipates the claimed acrylic resin and resist composition, see polymers (8), (11), (13), (14), and (16) in columns 73, line 15 – column 77, line 30.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

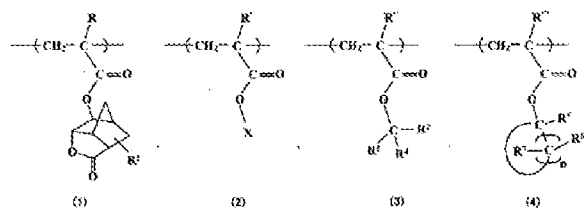
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over NISHI et al (2003/0091929)

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The claimed invention is drawn to the following:

1. An acrylic polymer comprising a recurring unit (i) represented by the following formula (1), a recurring unit (ii) represented by the following formula (2), and an acid-labile group-containing recurring unit (iii) which contains at least one unit selected from a recurring unit represented by the following formula (3) and formula (4).



wherein, in the formulas (1) to (4), R, R', R'', and R''' individually represent a hydrogen atom, methyl group, or trifluoromethyl group, in the formula (1), R¹ represents a hydrogen atom, linear or branched alkyl group having 1-4 carbon atoms, linear or branched alkoxy group having 1-4 carbon atoms, or linear or branched fluoroalkyl group having 1-4 carbon atoms, in the formula (2), X represents a polysubstituted hydrocarbon group consisting only of carbon and hydrogen and having 7-20 carbon atoms, in the formula (3), R² and R³ individually represent a linear or branched alkyl group having 1-4 carbon atoms and R⁴ represents an alicyclic hydrocarbon group having 4-20 carbon atoms, and in the formula (4), R⁵ represents a linear or branched alkyl group having 1-4 carbon atoms, R⁶ and R⁷ individually represent a hydrogen atom or a linear or branched alkyl group having 1-4 carbon atoms, and n represents an integer

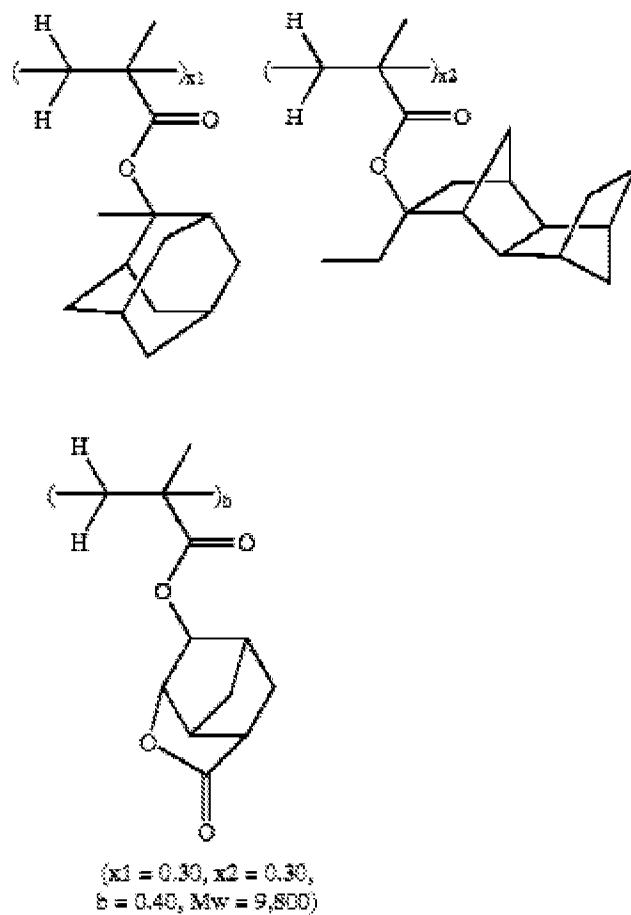
NISHI et al (2004/0176630) discloses a terpolymer as follows on page 23, [0167]

Polymer 6:

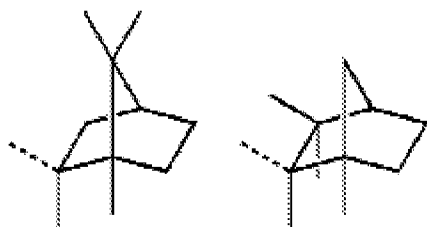
This copolymer meets the claimed acrylic resin lacking only the repeating unit described as recurring unit (4), see the attached image:

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(Polymer 6)



In NISHI et al are further discloses the presence of additional recurring units described on page 5, paragraphs [0022] - [0047]. Applicants are directed to paragraph [0044] on page 7 wherein the following recurring units defined to be an acid-labile group defined for R^{015} in the recurring unit (M4) in paragraph [0022] shown hereafter:



These two groups are defined to be the acid-labile group defined in be (L4) shown in paragraph [0044].

This recurring unit meets the claimed recurring unit (4) described in claim 1.

It would have been *prima facie* obvious to one of ordinary skill in the art of photoresist compositions and acrylic resins as disclosed in NISHI et al and adding a further recurring unit of formula (L4) and reasonably expect same or similar results as disclosed in NISHI et al for excellent sensitivity, resolution, and etching resistance with micropatterning with deep -UV.

The comparative examples have been considered, however the closest prior art acrylic polymer and photoresist composition as disclosed in NISHI et al have not been compared to the current acrylic polymer and photoresist composition in the claims. A showing of unexpected results may be grounds for to overcoming the obviousness rejection for secondary considerations.

Applicants comparisons in the specification include those acrylic polymers having a hydroxyl group on the recurring unit of formula (2) and not falling within the claimed language wherein the recurring unit only consists only of hydrogen and carbon.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (571) 272-1329. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Cynthia Kelly, can be reached on (571) 272-1526

The fax phone number for the USPTO is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PMR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/John S. Chu/
Primary Examiner, Art Unit 1795

J.Chu
June 3, 2009